

I. AMENDMENTS TO THE CLAIMS:

Please replace the prior version of the claims with the following amended claims in which claims 1, 2, 13, 15 have been amended:

1. (Currently Amended) A connector for providing a connection between differential signal circuits, wherein each differential signal circuit includes a pair of differential signal conductors and two associated ground conductors, the connector comprising:
an electrically insulative housing, the housing having a plurality of terminal-receiving cavities disposed in said housing, the terminal-receiving cavities being disposed in a pattern within said housing for supporting electrically conductive terminals in at least first and second distinct rows within said housing;
a plurality of electrically conductive terminals supported in some of said terminal-receiving cavities of said housing, said terminals including at least one distinct terminal set that includes a pair of differential signal terminals and at least two associated ground reference terminals, the pair of differential signal terminals of the one terminal set being disposed in terminal-receiving cavities in said first row and the two ground reference terminals of the one terminal set being disposed in terminal-receiving cavities in said second row, said two ground reference terminals of said one terminal set being further interconnected to cooperatively define a common ground path [~~for~~] for said pair of differential signal terminals; and,
said pair of differential signal terminals having a empty terminal-receiving cavity interposed between such that said differential signal terminals are spaced apart a first distance and said differential signal terminals are spaced apart from said two associated ground terminals a second distance, the first distance being greater than the second distance.
2. (Currently Amended) The connector of claim 1, wherein each of said [terminal] terminals includes a contact portion, a tail portion and a body portion that interconnects the contact and tail portions together.
3. (Original) The connector of claim 2, wherein said body and tail portions of each terminal extend at an angle to said contact portions thereof..

4. (Original) The connector of claim 2, wherein said two ground reference terminals are interconnected by a bridging piece along their body portions
5. (Original) The connector of claim 4, wherein said bridging pieces are integrally formed as part of said two ground reference terminals.
6. (Original) The connector of claim 4, wherein said contact portions extend horizontally through said housing and said body portions extend vertically, said bridging pieces interconnecting said two ground reference terminals together along their vertical extent.
7. (Original) The connector of claim 1, further including a circuit board engaging said terminal tail portions.
8. (Original) The connector of claim 1, further including a second distinct terminal set that includes a second pair of differential signal terminals and at least two second associated ground reference terminals, the second pair of differential signal terminals of the one terminal set being disposed in terminal-receiving cavities in said second row and the two second ground reference terminals of the second terminal set being disposed in terminal-receiving cavities in said first row , said two ground reference terminals of said one terminal set being further interconnected together; and,
said second pair of differential signal terminals also having a empty terminal-receiving cavity interposed between them such that said second pair of differential signal terminals are spaced apart by a third distance and said second pair of differential signal terminals are spaced apart from said second two associated ground terminals a fourth distance, the third distance being greater than the fourth distance.
9. (Original) The connector of claim 8, wherein said first and third distances are equal.
10. (Original) The connector of claim 9, wherein said second and fourth distances are equal.
11. (Original) The connector of claim 8, wherein said plurality of terminals further includes

first and second power terminals, the first power terminal being disposed in said first row adjacent to said two associated ground reference terminals of said one terminal set, the second power terminal being disposed in said second row adjacent said two associated ground reference terminals of said second terminal set.

12. (Original) The connector of claim 11, wherein said first and second power terminals are respectively disposed in said first and second rows in an offset manner so that an imaginary line drawn through the first and second power terminals extends at an angle across said first and second rows.
- 13 (Currently Amended) The connector of claim 8, wherein said plurality of terminals further includes first and second additional ground terminals [power terminals], the first additional ground terminal being disposed in said first row adjacent to said two associated ground reference terminals of said one terminal set, the second additional ground terminal being disposed in said second row adjacent said two associated ground reference terminals of said second terminal set.
14. (Original) The connector of claim 13, wherein said first and second additional ground terminals are respectively disposed in said first and second rows in an offset manner so that an imaginary line drawn through the first and second power terminals extends at an angle across said first and second rows.
15. (Currently Amended) A contact arrangement for a differential signal connector having an insulative housing and a plurality of conductive terminals supported in the housing, each of the terminals including [a t] at least opposing contact and tail portions, the contact portions contacting opposing terminals of a mating connector, the arrangement comprising:

the terminals defining at least a first differential signal channel that includes a first pair of differential signal terminal and a first pair of associated ground terminals, the first differential signal set terminals being disposed in first and second rows in said housing, the first row including said first pair of differential signal terminals and said second row including said first pair of associated ground terminals, said first pair of

associated ground terminals being disposed in said second row adjacent each other and spaced apart from each other by a first distance, said first pair of differential signal terminals being disposed in said first row adjacent each other but spaced apart from each other a second distance that is greater than the first distance.

16. (Original) The contact arrangement of claim 15, wherein said first pair of associated ground terminals are interconnected together.
17. (Original) The contact arrangement of claim 16, wherein said first pair of associated ground terminals are interconnected to each other between said contact and tail portions thereof.
18. (Original) The contact arrangement of claim 15, wherein said housing includes a plurality of terminal-receiving passages, and said first pair of differential signal terminals are received within two of the terminal-receiving passages and are separated from each other by an intervening, empty terminal-receiving passage.
19. (Original) The contact arrangement of claim 15, wherein said the terminals further define a second differential signal channel that includes a second pair of differential signal terminals and a second pair of associated ground terminals disposed in said first and second rows of said housing, the second pair of associated ground terminals being spaced apart from each other by said first distance, and said second pair of differential signal terminals being spaced apart from each other by said second distance.
20. (Original) The contact arrangement of claim 19, wherein said second pair of differential signal terminals are disposed in said second row of said housing and said second pair of associated ground terminals are disposed in said first row of said housing..
21. (Original) An electrical connector comprising:
 - a housing which holds signal contacts and ground contacts that are arranged in at least two rows, each of the rows including at least a pair of differential signal contacts lying adjacent each other, and at least a pair of said ground contacts, wherein each said

pair of differential signal contacts in one of said rows is opposed to a respective pair of ground contacts in another of said rows to form a signal transmission channel, the signal transmission channels being arranged consecutively along the rows in an alternating inverted sequence such that, within each said row, said pair of adjacent said signal contacts of one said signal transmission channel is spaced apart within said row from a pair of said ground contacts of a different said signal transmission channel, said ground contact pairs of each of said signal transmission channels being interconnected together to cooperatively define a common ground path associated with said pair of differential signal terminals of said signal transmission channel.

22. (Original) The electrical connector as recited in claim 21, wherein, for each of said signal transmission channels, said pair of differential signal terminals are spaced apart from each other widthwise a first distance and said two rows of terminals are spaced apart from each other a second distance, the first distance is greater than said second distance.
23. (Original) The electrical connector as recited in claim 21, wherein imaginary lines drawn through vertices of said pair of said differential signal terminals and either of said pair of associated ground contacts in any of said signal transmission channels form an imaginary triangular pattern.
24. (Original) The electrical connector as recited in claim 23, wherein the triangular shaped pattern for consecutive said signal transmission channels are inverted with respect to said triangular shaped pattern for a previous said signal transmission channel.

III. INFORMATION DISCLOSURE STATEMENT

Pursuant to 37 CFR 1.97 and 1.98, the references listed on the enclosed Form PTO-1449 are submitted for consideration in this RCE by the Examiner in the examination of the above-identified patent application. The full consideration of the references in their entirety by the Examiner is respectfully requested and encouraged. Also, it is respectfully requested that the references be entered into the record of the present application and that the Examiner place his or her initials in the appropriate area on the enclosed Form 1449, thereby indicating the Examiner's consideration of each of the references.

The submission of the references listed on the Form 1449 is for the purpose of providing a complete record and is not a concession that the references listed thereon are prior art to the invention claimed in the patent application, or that non-patent references listed thereon are publications or otherwise prior art to the invention claimed in the patent application. The right is expressly reserved to establish an invention date earlier than the above-identified filing date in order to remove any reference submitted herewith as prior art should it be deemed appropriate to do so.

Further, the submission of the references is not to be taken as a concession that any reference represents art that is relevant or analogous to the claimed invention. Accordingly, the right to argue that any reference is not properly within the scope of prior art relevant to an examination of the claims in the above-identified application is also expressly reserved.

This art cited includes the following and copies are provided with this submission.

I. U.S PATENTS

1. U. S. Patent No. 4,337,989 (ASICK) July 6, 1982
2. U. S. Patent No. 4,628,410 (GOODMAN et al.) December 9, 1986
3. U. S. Patent No. 4,678,121 (DOUTY et al.) July 7, 1987
4. U. S. Patent No. 4,790,765 (EHRENFELS et al.) December 13, 1988
5. U. S. Patent No. 4,824,383 (LEMKE) April 25, 1989
6. U. S. Patent No. 4,981,447 (ICHITSUBO) January 1, 1991
7. U. S. Patent No. 5,256,985 (TAN et al.) October 26, 1993
8. U. S. Patent No. 5,490,786 (MOSQUERA et al.) February 13, 1996
9. U. S. Patent No. 5,525,067 (GATTI) June 11, 1996
10. U. S. Patent No. 5,876,248 (BRUNKER et al.) March 2, 1999
11. U. S. Patent No. 5,954,541 (OZAI et al.) September 21, 1999
12. U. S. Patent No. 6,007,352 (AZUMA et al.) December 28, 1999
13. U. S. Patent No. 6,139,371 (TROUTMAN) October 31, 2000
14. U. S. Patent No. 6,142,804 (PELOZA et al.) November 7, 2000
15. U. S. Patent No. 6,164,995 (PELOZA) December 26, 2000
16. U. S. Patent No. 6,280,209 (BASSLER et al.) August 28, 2001

17. U. S. Patent No. 6,350,134 (FOGG et al.) February 26, 2002
18. U. S. Patent No. 6,454,605 (BASSLER et al.) September 24, 2002
19. U. S. Patent No. 6,457,983 (BASSLER et al.) October 1, 2002

II. FOREIGN PATENTS

20. European Patent Application No. 0 486 298 (SASAKI et al.) May 20, 1992
21. European Patent Application No. 0 529 350 (ROCHE) March 3, 1993
22. European Patent Application No. 0 793 297 (O'SULLIVAN et al.) September 3, 1987
23. European Patent Application No. 0 836 247 (MISKIN et al.) April 15, 1998
24. European Patent Application No. 1 239 552 (KATO et al.) September 11, 2002
25. WIPO Publication No. 00/10228 (NODA et al.) February 24, 2000.
26. WIPO Publication No. 89/11169 (LEMKE et al.) Published November 16, 1989.
27. Japanese Patent Application No 09-221691 (KAZUKI), Published September 3, 1999 as publication number 11-067369. As stated above, a computer-based translation obtained from the Japanese Patent Office is enclosed.

III. PUBLICATIONS

28. International Search report in PCT Application No. PCT/US2003/030106, the PCT counterpart of the present application.
29. Meeting Minutes from VESA Flat Panel Display Interface Committee, June 13, 1996, VESA DOC # FPD 96/43
30. Presentation by Don Chambers of JAE Electronics, Inc. "Considerations for Connectors for the Vesa Flat Panel Display Interface-2, VESA Doc FPD 96/39, Date believed to be June 13, 1996.
31. Presentation by JAE Electronics, Inc. "I/O Connector for LCD Display FI Series (for Vesa FPD 96/39), VESA Doc # FPD 96/39, date believed to be 13 February 1997.

A copy of each of the above noted references is enclosed as is a completed form PTO-1449. This should not be construed as a representation that a search has been performed by applicants.